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10/579,638

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EXAMINER

SIM, YONG H

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                               |                                |  |
|------------------------------|-------------------------------|--------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/579,638 | Applicant(s)<br>WELBERS ET AL. |  |
|                              | Examiner<br>YONG SIM          | Art Unit<br>2629               |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Notice to Applicant***

At the outset, Examiner respectfully notifies the Applicant that the US Patent # 6,816,143 B1 was inadvertently used for the 35 USC 102(b) rejections. Examiner appropriately corrected the heading of the rejection to recite WO 01/39163 A1 instead.

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**2. Claims 1 – 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lambert (WO 01/39163 A2).**

Regarding claim 1, Lambert teaches circuit arrangement for driving a display arrangement the circuit arrangement includes column driving means (11 "a block of column drivers" Fig. 2) for driving n column electrodes and row driving means for driving m row electrodes of the display arrangement (abstract: "A matrix display panel having a plurality of columns/electrodes, comprising a plurality of circuits each being adapted for selectively accessing one of said columns." A matrix display inherently comprises m row electrodes and row driving means.), wherein the column driving means (11 "a block of column drivers" Fig. 2) comprises n output channels (12 "column driver circuit/channel" Fig. 2) each output channel having a column electrode assigned (See fig. 2 for the assignment arrangement.) and is arranged for providing a respective column voltage to the assigned column electrode (See Fig. 2, each column driver circuit 12 provides output/column voltage to the assigned column electrodes 33.), an additional output channel (10 "spare column driver" Fig. 2) is arranged for providing respective column voltages, whereas each of the n column electrodes is connectable to the additional output channel (Pg. 10, lines 3 – 5; "The output of the spare column driver circuit is used to drive the column 22 corresponding to the column driver circuit 23 under test." See Fig. 2. Each of the columns is connectable to the spare column driver circuit. Pg. 10, line 12; "the output of the column driver is an analog medium voltage.").

Regarding claim 2, Lambert teaches circuit arrangement as claimed in claim 1, wherein the n output channels having switching means (19, 20 "multiplexers/switching means" Fig. 2) each of the n switching means is provided between an output channel and its associated column electrode for connecting the column electrode with the additional output channel (See fig. 2 for the connection arrangement of the switching means.).

Regarding claim 3, Lambert teaches circuit arrangement as claimed in claim 2, wherein the switching means are provided for disconnecting the output channel from its column electrode if the column electrode is connected to the additional output channel (Pg. 10, lines 1 – 5; “During the test of a column, the multiplexers/switching means are controlled so that the output of the column drive circuit under test is multiplexed onto test line... The output of the spare column driver circuit is used to drive the column corresponding to the column drive circuit under test.”).

Regarding claim 4, Lambert teaches circuit arrangement as claimed in claim 1, wherein at the beginning of driving a first row electrode of a frame the additional output channel is calibrated (Pg. 3, lines 5 – 7; “the output of the normal column drivers are systematically compared with the output of a spare column driver, to detect flawed normal column drivers, for example during a power on self test or continuously during operation.” The continuous

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comparison/test includes the beginning of driving a first row electrode of a frame. Pg. 10, lines 3 – 5; “The output of the spare column driver circuit is used to drive the column corresponding to the column drive circuit under test.” The spare column driver circuit is calibrated to output the corresponding output signal of the column drive circuit under test.), whereas during driving the following row electrodes the additional output channel is successively connected via the respective switching means to the column electrodes (Pg. 10, lines 25 – 26; “This process continues serially/successively until all column driver circuits are tested, and may repeat continuously...” The output channel is successively connected via respective multiplexer/switching mean to the column electrodes during driving of each row electrodes.), whereas the associated output channel of the column electrode currently connected to the additional output channel is disconnected from the respective column electrode for calibrating (Pg. 10, lines 1 – 3; “During the test of a column, the multiplexers are controlled so that the output of the column drive circuit under test is multiplexed onto test line.” See Fig. 2. The tested column driver 23 is disconnected from the column electrode 28 and is instead connected to the comparator 25.).

Regarding claim 5, Lambert teaches circuit arrangement as claimed in claim 1, wherein the column driving means comprises more than one additional output channel which are connectable to the column electrodes (Pg. 3, lines 21 – 23; in essence, the first and second techniques may be expanded to an increased number of spare column drivers per block.”).

Regarding claim 6, Lambert teaches circuit arrangement as claimed in claim 1, wherein calibration means are arranged for offset cancellation of the output channels connected to the calibration means (Pg. 10, lines 20 – 23; “If the comparator/calibration means determines that the column driver circuit under test is defective, the scan operation ceases, and the column driver circuit under test is persistently functionally replaced with the spare column driver circuit.” If the output voltage of the driver circuit compared with the output of the spare column driver is offset, meaning different, the driver circuit ceases scanning/cancellation. Thus, the comparator/calibration means performs offset cancellation of the output channels.).

Regarding claim 7, Lambert teaches display device comprising a display arrangement and a display driver circuit arrangement the display driver circuit arrangement comprises column driving means (11 "a block of column drivers" Fig. 2) for driving the n column electrodes with column voltages and row driving means for driving the m row electrodes with row selection voltages (abstract: “A matrix display panel having a plurality of columns/electrodes, comprising a plurality of circuits each being adapted for selectively accessing one of said columns.” A matrix display inherently comprises m row electrodes and row driving means.), wherein the column driving means (11 “a block of column drivers” Fig. 2) comprises n output channels (12 “column driver circuit/channel” Fig. 2) each output channel having a column electrode assigned (See fig. 2 for

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the assignment arrangement.) and is arranged for providing a respective column voltage to the assigned column electrode (Pg. 10, line 12; "the output of the column driver is an analog medium voltage." See Fig. 2, each column driver circuit 12 provides output/column voltage to the assigned column electrodes 33.), an additional output channel (10 "spare column driver" Fig. 2) is arranged for providing a column voltage, whereas each of the n column electrodes is connectable to the additional output channel (Pg. 10, lines 3 – 5; "The output/column voltage of the spare column driver circuit is used to drive the column 22 corresponding to the column driver circuit 23 under test." See Fig. 2. Each of the columns is connectable to the spare column driver circuit.).

Regarding claim 9, Lambert teaches method for driving a display arrangement whereas the display arrangement comprises n column electrodes and m row electrodes, the n column electrodes are driven by column driving means and the row electrodes are driven by row driving means (abstract: "A matrix display panel having a plurality of columns/electrodes, comprising a plurality of circuits each being adapted for selectively accessing one of said columns." A matrix display inherently comprises m row electrodes and row driving means.) wherein the column driving means(11 "a block of column drivers" Fig. 2) comprises n output channels (12 "column driver circuit/channel" Fig. 2) each providing a respective column voltage to its associated column electrode (Pg. 10, line 12; "the output of the column driver is an analog medium voltage." See Fig. 2, each column driver circuit 12 provides output/column voltage to the



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assigned column electrodes 33.) wherein an additional output channel is arranged (Pg. 10, lines 3 – 5; “The output of the spare column driver circuit is used to drive the column 22 corresponding to the column driver circuit 23 under test.” See Fig. 2. Each of the columns is connectable to the spare column driver circuit.), which is calibrated at the beginning of a driving procedure of a frame (Pg. 3, lines 5 – 7; “the output of the normal column drivers are systematically compared with the output of a spare column driver, to detect flawed normal column drivers, for example during a power on self test or continuously during operation.” The continuous comparison/test includes the beginning of driving a first row electrode of a frame. Pg. 10, lines 3 – 5; “The output of the spare column driver circuit is used to drive the column corresponding to the column drive circuit under test.” The spare column driver circuit is calibrated to output the corresponding output signal of the column drive circuit under test.), wherein after the additional output channel is calibrated, one of the n output channels is disconnected from its associated column electrode (Pg. 10, lines 1 – 3; “During the test of a column, the multiplexers are controlled so that the output of the column drive circuit under test is multiplexed onto test line.” See Fig. 2. The column drive circuit under test 23 is disconnected from the column electrode 28 and is instead connected to the comparator 25.), wherein this column electrode is connected to the calibrated additional output channel (See Fig. 2. The spare column driver circuit is connected to the column electrode 28 of the column drive circuit under test 23.), the calibrated additional output channel supplies the respective column voltage to the column electrode (Pg. 10, lines 3 – 5; “The

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output of the spare column driver circuit is used to drive the column corresponding to the column drive circuit under test.” The spare column driver circuit is calibrated to output the corresponding output signal of the column drive circuit under test.)whereas the disconnected output channel is calibrated (Pg. 10, lines 1 – 3; “During the test of a column, the multiplexers are controlled so that the output of the column drive circuit under test is multiplexed onto test line.”).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. **Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert in view of Webb (US 6,600,467 B1).**

Regarding claim 8, Lambert teaches display device as claimed in claim 7.

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But Lambert does not expressly disclose wherein the display arrangement comprises a liquid crystal material between a first substrate provided with row electrodes and a second substrate provided with column electrodes in which overlapping parts of the row and column electrodes define pixels.

However, in the same field of endeavor, Webb teaches an LCD display wherein the display comprises a liquid crystal material between a first substrate provided with row electrodes and a second substrate provided with column electrodes in which overlapping parts of the row and column electrodes define pixels (Webb: See Fig. 2B. Col. lines 36 – 48.).

Therefore, taking the combined teachings of Lambert and Webb, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having an LCD display comprising a liquid crystal material between a first substrate provided with row electrodes and a second substrate provided with column electrodes in which overlapping parts of the row and column electrodes define pixels as taught by Webb into the display device as taught by Lambert to obtain a display device comprising a liquid crystal material between a first substrate provided with row electrodes and a second substrate provided with column electrodes in which overlapping parts of the row and column electrodes define pixels to allow manufacturing a high resolution display.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong SIM whose telephone number is

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(571)270-1189. The examiner can normally be reached on Monday - Friday  
(Alternate Fridays off) 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/YONG SIM/  
Examiner, Art Unit 2629  
6/15/2010